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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/212,726	12/15/1998	KLAUS F. SCHUEGRAF	M122-1098	7984

21567 7590 03/15/2005  
WELLS ST. JOHN P.S.  
601 W. FIRST AVENUE, SUITE 1300  
SPOKANE, WA 99201

EXAMINER
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KIELIN, ERIK J

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/212,726	SCHUEGRAF, KLAUS F.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Erik Kielin	2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 60-62, 64 and 66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 60-62, 64 and 66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                         |                                                                             |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.                                                |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.                                                             | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 December 2004 has been entered.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 60-62, 64 and 66 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,121,164 (**Yieh et al.**) considered with **Wolf, et al.** Silicon Processing for the VLSI Era, Vol. 1-Process Technology, Lattice Press: Sunset Beach CA, 1986, pp. 166-167, for a showing of inherency only and considered with US 5,360,646 (**Morita**) also for a showing of inherency for claim 64 only.

Regarding claim 60, **Yieh** discloses a semiconductor processing method of depositing a SiO<sub>2</sub> layer comprising,

providing a substrate **12** within a cold-wall, chemical vapor deposition (CVD) reactor **10** (Fig. 1A);

providing rf power of 0 to 900 watts with 350 watts being exemplary and a temperature of 360 to 440 °C with an example at 400 °C within the CVD chamber (col. 11, line 60 to col. 12, line 64; col. 10, lines 54-64);

injecting TEOS for example into the CVD reactor at a total flow rate of “about 1000 sccm to about 6000 sccm” (col. 11, lines 13-21), which overlaps 975 sccm;

feeding gaseous  $\text{H}_2\text{O}_2$  into the CVD reactor (col. 11, line 60 to col. 12, line 64); and

decomposing the TEOS to form  $\text{SiO}_2$  and depositing the  $\text{SiO}_2$  onto the substrate, the decomposing being conducted at a pressure of from about 0.5 to 20 Torr which overlaps 10-80 Torr (col. 11, line 60 to col. 12, line 64).

It is seen to be inherent that the reactor of **Yieh** is a cold-wall reactor, because the heating of the wafers is via the heater **26** located beneath the wafers (Yieh Fig. 1A; col. 5, lines 11-19). **Wolf** at pages 166-167 indicates that when the heating comes from within the reaction chamber, that the reactor is called a “cold-wall” reactor, as compared to a “hot-wall” reactor wherein the heating elements are located external to the chamber.

Regarding claim 61, **Yieh** discloses that the gaseous precursors of  $\text{H}_2\text{O}_2$  and TEOS are independently fed into the CVD reactor via source lines **20** (Fig. 1A).

Regarding claim 62, **Yieh** discloses that the precursors of  $\text{H}_2\text{O}_2$  and TEOS are fed into the CVD reactor simultaneously by using a gas mixer **19** (Fig. 1A).

Regarding claim 64, **Yieh** inherent feeds gaseous H<sub>2</sub>O into the CVD reactor at least because the maximum concentration available is 98% H<sub>2</sub>O<sub>2</sub> and because H<sub>2</sub>O<sub>2</sub> decomposes into H<sub>2</sub>O and O as shown to be inherent in **Morita** at col. 4, lines 49-60.

Regarding claim 66, **Yieh** implicitly discloses that the substrate **12** has a high aspect ratio and that the SiO<sub>2</sub> is conformally deposited, because the method avoids step coverage problems (col. 2, lines 20-25). “[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.” *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968) See also *In re Lamberti*, 545 F.2d 747, 750, 192 USPQ 278, 280 (CCPA 1976).

#### ***Response to Arguments***

4. Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik Kielin whose telephone number is 571-272-1693. The examiner can normally be reached from 9:00 - 19:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2813

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Erik Kielin  
Primary Examiner  
March 9, 2005